

## PROPOSED REGULATION ORDER

Set forth below are the proposed amendments to title 13 of the California Code of Regulations. Proposed amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions.

### § 1976. Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions.

(a) *[Fuel evaporative emission standards for 1970 through 1977 model passenger cars and light-duty trucks. No change.]*

(b)(1) Evaporative emissions for 1978 and subsequent model gasoline-fueled, 1983 and subsequent model liquefied petroleum gas-fueled, and 1993 and subsequent model alcohol-fueled motor vehicles and hybrid electric vehicles subject to exhaust emission standards under this article, except petroleum-fueled diesel vehicles, compressed natural gas-fueled vehicles, hybrid electric vehicles that have sealed fuel systems which can be demonstrated to have no evaporative emissions, and motorcycles, shall not exceed the following standards:

- (A) *[Evaporative emission standards for 1978 through 1994 model motor vehicles. No change.]*
- (B) *[Evaporative emission standards on the three-day diurnal test for 1995 through 2005 model motor vehicles. No change.]*
- (C) *[Evaporative emission standards on the supplemental two-day diurnal test for 1995 through 2005 model motor vehicles. No change.]*
- (D) *[Zero-emission vehicle evaporative requirements. No change.]*

(E) For 2001 to 2013 model year vehicles, ~~The optional zero-fuel~~ evaporative emission standards for the three-day and two-day diurnal-plus-hot-soak tests are 0.35 grams per test for passenger cars, 0.50 grams per test for light-duty trucks 6,000 lbs. GVWR and under, and 0.75 grams per test for light-duty trucks from 6,001 to 8,500 lbs. GVWR, to account for vehicle non-fuel evaporative emissions (resulting from paints, upholstery, tires, and other vehicle sources). Vehicles demonstrating compliance with these evaporative emission standards shall also have zero (0.0) grams of fuel evaporative emissions per test for the three-day and two-day diurnal-plus-hot-soak tests. The “useful life” shall be 15 years or 150,000 miles, whichever occurs first. In lieu of demonstrating compliance with the zero (0.0) grams of fuel evaporative emissions per test over the three-day and two-day diurnal-plus-hot-soak tests, the manufacturer may submit for advance Executive Officer approval a test plan to demonstrate that the vehicle has zero (0.0) grams of fuel evaporative emissions throughout its useful life.

Additionally, in the case of a SULEV vehicle for which a manufacturer is seeking a partial ZEV credit, the manufacturer may prior to certification elect to have measured fuel evaporative emissions reduced by a specified value in all certification and in-use testing of the vehicle as long as measured mass exhaust emissions of NMOG for the vehicle are increased in all certification and in-use testing. The measured fuel evaporative emissions shall be reduced in increments of 0.1 gram per test, and the measured mass exhaust emissions of NMOG from the vehicle shall be increased by a gram per mile factor, to be determined by the Executive Officer, for every 0.1 gram per test by which the measured fuel evaporative emissions are reduced. For the purpose of this calculation, the evaporative emissions shall be measured, in grams per test, to a minimum of three significant figures.

(F) For the 2004 ~~and subsequent~~ through 2013 model motor vehicles identified below, tested in accordance with the test procedures described in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989 and as modified by the “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” incorporated by reference in section 1976(c), the evaporative emission standards are:

<i>Vehicle Type</i>	<i>Hydrocarbon<sup>(1)</sup> Standards<sup>(2)(3)(4)</sup></i>		
	<i>Running Loss (grams per mile)</i>	<i>Three Day Diurnal + Hot Soak (grams per test)</i>	<i>Two-Day Diurnal + Hot Soak (grams per test)</i>
Passenger cars	0.05	0.50	0.65
Light-duty trucks (under 8,501 lbs. GVWR)			
6,000 lbs. GVWR and under	0.05	0.65	0.85
6,001 - 8,500 lbs. GVWR	0.05	0.90	1.15
Medium-duty vehicles (8,501 - 14,000 lbs. GVWR)	0.05	1.00	1.25
Heavy-duty vehicles (over 14,000 lbs. GVWR)	0.05	1.00	1.25

<sup>1</sup> Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

<sup>2</sup> For all vehicles certified to these standards, the “useful life” shall be 15 years or 150,000 miles, whichever first occurs. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1 or 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

<sup>3</sup> (a) These evaporative emission standards shall be phased-in beginning with the 2004 model year. Each manufacturer, except small volume manufacturers, shall certify at a minimum the specified percentage of its vehicle fleet to the evaporative emission standards in this table or the optional zero-evaporative emission standards in section 1976(b)(1)(E) according to the schedule set forth below. For purposes of this paragraph (a), each manufacturer’s vehicle fleet consists of the total projected California sales of the

manufacturer's gasoline-fueled, liquefied petroleum-fueled and alcohol-fueled passenger cars, light-duty trucks, medium-duty vehicles, and heavy-duty vehicles.

Model Year	Minimum Percentage of Vehicles Certified to the Standards in §§1976(b)(1)(F) and (b)(1)(E)
2004	40
2005	80
2006 and subsequent	100

A small volume manufacturer shall certify 100 percent of its 2006 and subsequent model vehicle fleet to the evaporative emission standards in the table or the optional zero-evaporative emission standards in section 1976(b)(1)(E).

All 2004 through 2005 model-year motor vehicles which are not subject to these standards or the standards in section 1976(b)(1)(E) pursuant to the phase-in schedule shall comply with the requirements of sections 1976(b)(1)(B) and (C).

- (b) A manufacturer may use an "Alternative or Equivalent Phase-in Schedule" to comply with the phase-in requirements. An "Alternative Phase-in" is one that achieves at least equivalent emission reductions by the end of the last model year of the scheduled phase-in. Model-year emission reductions shall be calculated by multiplying the percent of vehicles (based on the manufacturer's projected California sales volume of the applicable vehicle fleet) meeting the new requirements per model year by the number of model years implemented prior to and including the last model year of the scheduled phase-in. The "cumulative total" is the summation of the model-year emission reductions (e.g., the three model-year 40/80/100 percent phase-in schedule would be calculated as:  $(40\% \times 3 \text{ years}) + (80\% \times 2 \text{ years}) + (100\% \times 1 \text{ year}) = 380$ ). The required cumulative total for the phase-in of these standards is 380 emission reductions. Any alternative phase-in that results in an equal or larger cumulative total than the required cumulative total by the end of the last model year of the scheduled phase-in shall be considered acceptable by the Executive Officer only if all vehicles subject to the phase-in comply with the respective requirements in the last model year of the required phase-in schedule. A manufacturer shall be allowed to include vehicles introduced before the first model year of the scheduled phase-in (e.g., in the previous example, 10 percent introduced one year before the scheduled phase-in begins would be calculated as:  $(10\% \times 4 \text{ years}) = 40$ ) and added to the cumulative total.
- (c) These evaporative emission standards do not apply to zero-emission vehicles.

- 4 In-use compliance whole vehicle testing shall not begin until the motor vehicle is at least one year from the production date and has accumulated a minimum of 10,000 miles. For vehicles introduced prior to the 2007 model year, in-use compliance standards of 1.75 times the "Three-Day Diurnal + Hot-Soak" and "Two-Day Diurnal + Hot-Soak" gram per test standards shall apply for only the first three model years of an evaporative family certified to a new standard.

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(G) For 2014 and subsequent model motor vehicles identified below, a manufacturer must certify vehicles to the emission standards specified in either Option 1 or Option 2 below. Once a compliance option has been chosen for an evaporative family, the manufacturer shall not change the evaporative family to the other compliance option until the 2023 and subsequent model years.

1. Option 1. The evaporative emissions from 2014 and subsequent model motor vehicles, tested in accordance with the test procedure sequence described in the “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” incorporated by reference in section 1976(c), shall not exceed:

<u>Vehicle Type</u>	<u>Hydrocarbon<sup>(1)</sup> Standards<sup>(2)</sup></u>		
	<u>Running Loss</u> <u>(grams per</u> <u>mile)</u>	<u>Three-Day Diurnal + Hot Soak and</u> <u>Two-Day Diurnal + Hot Soak</u>	
		<u>Whole Vehicle</u> <u>(grams per test)</u>	<u>Fuel Only<sup>(3)</sup></u> <u>(grams per test)</u>
<u>Passenger cars</u>	<u>0.05</u>	<u>0.350</u>	<u>0.0</u>
<u>Light-duty trucks</u> <u>6,000 GVWR and under</u>	<u>0.05</u>	<u>0.500</u>	<u>0.0</u>
<u>Light-duty trucks</u> <u>6,001 - 8,500 lbs. GVWR</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>
<u>Medium-duty vehicles</u> <u>(8,501 - 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>
<u>Heavy-duty vehicles</u> <u>(over 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.750</u>	<u>0.0</u>

<sup>1</sup> Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

<sup>2</sup> For all vehicles certified to these standards, the “useful life” shall be 15 years and 150,000 miles, whichever occurs first. Approval of vehicles that are not exhaust emission tested using a chassis dynamometer pursuant to section 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

<sup>3</sup> In lieu of demonstrating compliance with the zero (0.0) grams of fuel evaporative emissions per test over the three-day and two-day diurnal-plus-hot-soak tests, the manufacturer may submit for advance Executive Officer approval a test plan to demonstrate that the vehicle has zero (0.0) grams of fuel evaporative emissions throughout its useful life.

2. Option 2. The evaporative emissions from 2014 and subsequent model motor vehicles, tested in accordance with the test procedure sequence in the “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” incorporated by reference in section 1976(c), shall not exceed:

<u>Vehicle Type</u>	<u>Hydrocarbon<sup>(1)</sup> Standards</u>		
	<u>Running Loss<sup>(2)</sup></u> <u>(grams per mile)</u>	<u>Highest Diurnal + Hot Soak<sup>(2)(3)(4)(5)</sup></u> <u>(grams per test)</u>	<u>Bleed Emissions<sup>(6)</sup></u> <u>(grams per test)</u>
<u>Passenger cars;</u> <u>Light-duty trucks</u> <u>6,000 lbs. GVWR and under,</u> <u>and 0 - 3,750 lbs. LVW</u>	<u>0.05</u>	<u>0.300</u>	<u>0.020</u>
<u>Light-duty trucks</u> <u>6,000 lbs. GVWR and under,</u> <u>and 3751 – 5750 lbs. LVW</u>	<u>0.05</u>	<u>0.400</u>	
<u>Light-duty trucks</u> <u>6,001 - 8,500 lbs. GVWR</u>	<u>0.05</u>	<u>0.500</u>	
<u>Medium-duty vehicles</u> <u>(8,501 - 14,000 lbs. GVWR);</u> <u>Heavy-duty vehicles</u> <u>(over 14,000 lbs. GVWR)</u>	<u>0.05</u>	<u>0.600</u>	<u>0.030</u>

<sup>1</sup> Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

<sup>2</sup> For all vehicles certified to these standards, the “useful life” shall be 15 years and 150,000 miles, whichever occurs first. Approval of vehicles that are not exhaust emission tested using a chassis dynamometer pursuant to section 1961, title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

<sup>3</sup> A manufacturer shall determine compliance by selecting the highest diurnal plus hot soak emission value of the Three-Day Diurnal Plus Hot Soak Test and the Two-Day Diurnal Plus Hot Soak Test for a given certification test vehicle and comparing the value to the emission standard.

<sup>4</sup> Fleet Average Option for the Highest Diurnal Plus Hot Soak Emission Standard Within Each Vehicle Type Category. For each model year, the manufacturer may utilize the fleet average option for compliance by calculating its fleet average hydrocarbon emission value within each vehicle type category as follows:

$$\frac{n}{\sum_{i=1}^n (\text{number of vehicles in the evaporative family})_i \times (\text{family emission limit})_i} \div$$

$$\sum_{i=1}^n (\text{number of vehicles in the evaporative family})_i$$

where "n" = a manufacturer's number of Option 2 certification evaporative families within a vehicle type category for a given model year;

“number of vehicles in the evaporative family” = the number of vehicles produced and delivered for sale in California in the evaporative family;

"family emission limit" = the numerical limit selected by the manufacturer for the evaporative family that serves as the emission standard for the evaporative family with respect to all testing, instead of the emission standard specified in this section 1976 (b)(1)(G)2. The family emission limit shall not exceed 0.500 grams per test for passenger cars, 0.650 grams per test for light duty trucks 6,000 pounds GVWR and under, 0.900 grams per test for light-duty trucks from 6,001 to 8,500 pounds GVWR, and 1.000 grams for medium-duty vehicles and heavy-duty vehicles. In addition, the family emission limit shall be set in increments of 50 milligrams per test.

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#### Calculation of Fleet Average Hydrocarbon Credits or Debits.

(1) Calculation of Hydrocarbon Credits or Debits. For each vehicle type category in the model year, a manufacturer shall calculate the hydrocarbon credits or debits, as follows:

$$[(\text{Type Category Hydrocarbon Emission Standard}) - (\text{Manufacturer's Type-Category Fleet Average Total-Hydrocarbon Emission Value})] \times (\text{Total Number of Vehicles Produced and Delivered for Sale in California in the Vehicle Type Category})$$

A negative number constitutes hydrocarbon debits, and a positive number constitutes hydrocarbon credits accrued by the manufacturer for the given model year. Hydrocarbon credits earned in a given model year shall retain full value through the fifth model year after they are earned. At the beginning of the sixth model year, the hydrocarbon credits will have no value.

(2) Procedure for Offsetting Hydrocarbon Debits. A manufacturer shall equalize hydrocarbon debits by earning hydrocarbon credits in an amount equal to the hydrocarbon debits. A manufacturer shall equalize hydrocarbon debits within five model years after they have been incurred. If hydrocarbon debits are not equalized within the five model year period, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the hydrocarbon debits are not equalized by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's emission standards shall be determined by dividing the total amount of hydrocarbon debits for the model year in the vehicle type category by the fleet average hydrocarbon emission standard for the model year in which the debits were first incurred.

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Vehicle Canister System Bleed Emissions. Compliance with the bleed emission requirement shall be determined based on the Bleed Emission Test Procedure located in the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles" incorporated by reference in section 1976(c). This requirement shall be demonstrated on a stabilized canister system and does not have a useful life requirement..

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3. *Phase-In Schedule.* For each model year, the manufacturer shall certify, at a minimum, the specified percentage of its vehicle fleet to these evaporative emission standards (section 1976(b)(1)(G)), according to the schedule set forth below. For the purpose of this section 1976(b)(1)(G)3. only, the manufacturer's vehicle fleet consists of the manufacturer's gasoline-fueled, liquefied petroleum-fueled, and alcohol-fueled passenger cars, light-duty trucks, medium-duty vehicles, and heavy-duty vehicles that are produced and delivered for sale in California. All 2014 to 2021 model year motor vehicles that are not subject to these standards pursuant to the phase-in schedule shall comply with the requirements for 2004 through 2013 motor vehicles, described in section 1976(b)(1)(F).

<u>Model Years</u>	<u>Minimum Percentage of Vehicle Fleet</u>
<u>2014 to 2017</u>	<u>No Specific Requirement<sup>(1)</sup></u>
<u>2018 to 2019</u>	<u>60</u>
<u>2020 to 2021</u>	<u>80</u>
<u>2022</u>	<u>100</u>

- 1 Although a specific percentage of these model year vehicles is not required to be certified to these emission standards, 2014 to 2017 model year motor vehicles that qualify to generate Partial ZEV allowances must be certified to these evaporative emission standards (section 1976(b)(1)(G)). The Partial ZEV allowance vehicles are described in the “California Exhaust Emission Standards And Test Procedures For 2009 And Subsequent Model Zero-Emission Vehicles And Hybrid Electric Vehicles, In The Passenger Car, Light-Duty Truck And Medium-Duty Vehicle Classes” incorporated by reference in section 1962.1(h).

4. Carry-Over of 2013 Model Year Zero-Fuel Evaporative Families. 2013 model year motor vehicles certified to the evaporative emission standards of section 1976(b)(1)(E) may carry-over to 2014 to 2017 model years and be considered compliant with the requirements of section 1976(b)(1)(G). If the manufacturer chooses to participate in the fleet average option, the following family emission limits are assigned to these 2013 model year evaporative families for the calculation of the manufacturer’s fleet average hydrocarbon emission value.

<u>Vehicle Type</u>	<u>Highest Diurnal + Hot Soak (grams per test)</u>
<u>Passenger cars; Light-duty trucks 6,000 lbs. GVWR and under, and 0 - 3,750 lbs. LVW</u>	<u>0.300</u>
<u>Light-duty trucks 6,000 lbs. GVWR and under, and 3751 – 5750 lbs. LVW</u>	<u>0.400</u>
<u>Light-duty trucks 6,001 - 8,500 lbs. GVWR</u>	<u>0.500</u>

(b)(2) *[Evaporative emissions standards for gasoline-fueled motorcycles. No change.]*

(c) The test procedures for determining compliance with the standards in subsection (b) above applicable to 1978 through 2000 model year vehicles are set forth in “California Evaporative Emission Standards and Test Procedures for 1978-2000 Model Motor Vehicles,” adopted by the state board on April 16, 1975, as last amended August 5, 1999, which is incorporated herein by reference. The test procedures for determining compliance with standards applicable to 2001 and subsequent model year vehicles are set forth in the “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles,” adopted by the state board on August 5, 1999, and as last amended ~~September 27, 2010~~ \_\_\_\_\_, which is incorporated herein by reference.

(d) *[Motorcycle requirements. No change.]*

(e) *[Motorcycle requirements. No change.]*

(f) *[Definitions of small volume and ultra-small volume manufacturer. No change.]*

Note: Authority cited: Sections 39500, 39600, 39601, 39667, 43013, 43018, 43101, 43104, 43105, 43106 and 43107, Health and Safety Code. Reference: Sections 39002, 39003, 39500, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204 and 43205 Health and Safety Code.